LISTING OF THE CLAIMS

The following **Listing of the Claims** replaces all prior claims in the application.

Claims 1-7 (Cancelled).

Claim 8 (Original). An isolated polypeptide comprising the amino acid sequence defined by SEQ ID NO: 4.

Claim 9 (Currently Amended/Withdrawn). An antibody that specifically recognizes Drosophila Recombination Associated Protein (DRAP) ~~polypeptide~~.

Claim 10 (Currently amended). ~~A fragment of a DRAP polypeptide of SEQ ID NO: 4 or function-conservative variants of said~~ An isolated polypeptide ~~polypeptide, said fragment or function-conservative variant being~~ characterized in that [[,]] it ~~carries out recombinase/topoisomerse activity associated with the DRAP protein~~ exhibits recombinase and topoisomerase activities and is encoded by a nucleic acid that hybridizes under high stringency hybridization conditions to an isolated nucleic acid comprising a sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO: 2, and SEQ ID NO. 3.

Claim 11 (Withdrawn). A method for isolating genomic DNA comprising introducing an oligonucleotide and DRAP into a cell, homologously recombining said oligonucleotide with genomic DNA homologous to said oligonucleotide and isolating said genomic DNA.

Claim 12 (Currently amended). A method for targeting mutagenesis of a defined segment of DNA comprising introducing ~~DRAP~~ the isolated polypeptide of claim 10 and an oligonucleotide homologous to said DNA segment into a cell~~, together with DNA~~ comprising said segment.

Claim 13 (Currently amended/Withdrawn). A method for the removal of a defined segment of DNA comprising introducing DRAP and an oligonucleotide homologous to said DNA segment into a cell~~, together with DNA~~ comprising said segment.

Claim 14 (Currently Amended/Withdrawn). A method for cloning a defined segment of DNA comprising introducing DRAP and an oligonucleotide homologous to said DNA segment into a cell~~, together with DNA~~ comprising said segment.

Claim 15 (Currently Amended/Withdrawn). A method for mapping a defined segment of DNA comprising introducing DRAP and an oligonucleotide homologous to said DNA segment into a cell~~, together with DNA~~ comprising said segment.

Claim 16 (Currently amended). A method of promoting gene disruptions of a defined segment of DNA comprising introducing ~~DRAP~~ the isolated polypeptide of claim 10 and an oligonucleotide homologous to said DNA segment into a cell~~, together with DNA~~ comprising said segment.

Claim 17 (Withdrawn). A method for the experimental and therapeutic application of DRAP driven genetic modification of a gene responsible for a genetic disease comprising introducing DRAP and an oligonucleotide homologous to said gene into a cell.

Claim 18 (Original). A protein sample comprising an isolated polypeptide comprising the amino acid sequence of SEQ ID NO: 4, said polypeptide comprising at least about 1% by weight of the total protein in the sample.

Claim 19 (Original). A protein sample comprising an isolated polypeptide comprising the amino acid sequence of SEQ ID NO: 4, said polypeptide comprising at least about 10% by weight of the total protein in the sample.

Claim 20 (New). The isolated polypeptide of claim 10 wherein the isolated polypeptide comprises the amino acid sequence of SEQ ID NO: 4.

Claim 21 (New). The method of claim 12 wherein the isolated polypeptide comprises the amino acid sequence of SEQ ID NO: 4.

Claim 22 (New). The method of claim 16 wherein the isolated polypeptide comprises the amino acid sequence of SEQ ID NO: 4.